

CEREGO – AN ADAPTIVE TOOL FOR TEACHING FIRST YEAR STUDENTS CHEMISTRY. AKA: STUDENTS DON'T LIKE TEXTBOOKS

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Problem

First year chemistry students need to learn the “language” of organic chemistry in order to be able to understand and interact with the material taught in organic chemistry courses. This involves learning to recognise different representations of a wide range of different functional groups, systematic procedures for naming molecules, how to describe the structure of different chemical species and how to describe how a reaction proceeds.

This can be an overwhelming task, in particular for students with limited previous chemistry experience. This material may not be examined explicitly, but without these skills the students cannot attempt to learn and complete assessment on more complicated and difficult concepts and theories. Traditionally these concepts have been taught using lectures and workshops, augmented with material provided in the textbook and online using *Blackboard*.

Plan

In our first year organic chemistry unit an online adaptive learning tool, *Cerego*, was used to augment the learning of nomenclature and chemical group recognition. *Cerego* allowed students to access the material on any internet enabled device (computer, tablet, smartphone etc.) at any time that was convenient for them. The tool provided feedback on their progress, reminders to continue refreshing their memories, as well as providing analytics for the teaching team.

Action

The content was only briefly introduced in a one hour lecture and students were directed to use *Cerego* and their text book as the main tools for independent study of nomenclature and chemical functional groups. Brief questions about nomenclature were included at the start of some lectures and workshops to gauge students' progress, as the semester progressed.

Reflection

Results from a short survey was used to measure the effectiveness of *Cerego*. The feedback was generally positive overall, with all students finding the software at least ‘somewhat useful’, with almost half describing it as their ‘preferred study method for this material’. Students provided comments that they enjoyed the repetition and ease of access. Some students became very engaged with the tool, finding it ‘rather addictive’. One student even commented with ‘love how it can replace Candy Crush’.

The major criticisms of *Cerego* was that there wasn't enough material in the module, and that it only teaches at a relatively basic memorization level. Students really enjoy this digital and interactive style of learning, so as a community we need to be developing much more effective tools to engage students on a much higher level conceptually.

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